Fully redundant LXD cluster

Bullet proof storage, networking and compute on the cheap

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What’s LXD?
What’s this all about?
How did I get there?
The last dedicated server

**CPU**  
Xeon E3-1270 v6  
4 cores, 8 threads, 3.80Ghz from 2017.

**RAM**  
32GB DDR4  
2x 16GB

**NIC**  
Intel I-210 gigabit  
Actually internet connectivity capped at 500Mb/s upload.

**DISK**  
2x 2TB HDD + 2x 500GB NVME  
Everything run in RAID-1 locally.
The new hardware

3x

CPU
2x Xeon E5-2630 v3
8 cores, 16 threads, 2.40Ghz from 2014.

RAM
64GB DDR4
4x 16GB

NIC
2x Intel I-350 gigabit + 4x Intel X540 ten gigabit
WAN is now gigabit symmetric with no restrictions.

DISK
2x 6TB HDD + 2x 4TB HDD + 2x 2TB SSD + 2x 500GB NVME
Now using Ceph for storage (3 replicas).
The software
The final setup
The final setup

```
stgraber@castlana:~$ lxc cluster list
<table>
<thead>
<tr>
<th>NAME</th>
<th>URL</th>
<th>DATABASE</th>
<th>STATE</th>
<th>MESSAGE</th>
<th>ARCHITECTURE</th>
<th>FAILURE DOMAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>abydos</td>
<td>https://[2602:fd23:8:200:110]:8443</td>
<td>YES</td>
<td>ONLINE</td>
<td>fully operational</td>
<td>x86_64</td>
<td>default</td>
</tr>
<tr>
<td>langara</td>
<td>https://[2602:fd23:8:200:101]:8443</td>
<td>YES</td>
<td>ONLINE</td>
<td>fully operational</td>
<td>x86_64</td>
<td>default</td>
</tr>
<tr>
<td>orlilla</td>
<td>https://[2602:fd23:8:200:102]:8443</td>
<td>YES</td>
<td>ONLINE</td>
<td>fully operational</td>
<td>x86_64</td>
<td>default</td>
</tr>
</tbody>
</table>

stgraber@castlana:~$ lxc storage list

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>DRIVER</th>
<th>STATE</th>
<th>USED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>hdd</td>
<td>ceph</td>
<td>CREATED</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>shared</td>
<td>cephfs</td>
<td>CREATED</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ssd</td>
<td>ceph</td>
<td>CREATED</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>

stgraber@castlana:~$ lxc network list

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>MANAGED</th>
<th>IPV4</th>
<th>IPV6</th>
<th>DESCRIPTION</th>
<th>USED BY</th>
<th>STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>anycast-1</td>
<td>ovn</td>
<td>YES</td>
<td>16.174.48.1/24</td>
<td>2602:fd23:8:1001::1/64</td>
<td>5</td>
<td>CREATED</td>
<td></td>
</tr>
<tr>
<td>anycast-2</td>
<td>ovn</td>
<td>YES</td>
<td>18.186.128.1/24</td>
<td>2602:fd23:8:1002::1/64</td>
<td>5</td>
<td>CREATED</td>
<td></td>
</tr>
<tr>
<td>anycast-3</td>
<td>ovn</td>
<td>YES</td>
<td>18.124.138.1/24</td>
<td>2602:fd23:8:1003::1/64</td>
<td>5</td>
<td>CREATED</td>
<td></td>
</tr>
<tr>
<td>default</td>
<td>ovn</td>
<td>YES</td>
<td>18.65.122.1/24</td>
<td>2602:fd23:8:1008::1/64</td>
<td>13</td>
<td>CREATED</td>
<td></td>
</tr>
</tbody>
</table>
```

```
The final setup

Upstream R1

Upstream R2

Provider

frr01

frr02

frr03

Routers

abydos

orilla

langara

Hosts
Conclusion

Questions?

LXD website: https://linuxcontainers.org/lxd
Online demo: https://linuxcontainers.org/lxd/try-it
Community: https://discuss.linuxcontainers.org

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